

## CLAIMS

1. An optical analysis device comprising:  
a light-transmitting member for transmitting light,  
having an external face capable of immobilizing a  
5 detection-objective substance;  
a light separating means for separating an exciting  
light introduced into the light-transmitting member  
at a first end thereof and transmitted through the  
light-transmitting member; and a fluorescence light  
10 produced by excitation of the detection-objective  
substance by the exciting light, at a second end of  
the light-transmitting member, and  
a detecting means for detecting the fluorescence  
light separated by the light separating means.
- 15 2. The optical analysis device according to  
claim 1, wherein the light-separating means is a  
diffraction grating.
3. The optical analysis device according to  
claim 1, wherein the light-transmitting member  
20 comprises an optical waveguide.
4. The optical analysis device according to  
claim 1, wherein the optical analysis device  
comprises a flow path which covers the light-  
transmitting member and has an inlet for introducing  
25 the detection-objective substance and an outlet for  
discharging the detection-objective substance.

5. The optical analysis device according to claim 1, wherein the light-transmitting member has at the first end thereof a coupling means for coupling the exciting light to the light-transmitting member.

5 6. The optical analysis device according to claim 5, wherein the coupling means is a diffraction grating.

7. The optical analysis device according to any of claims 1 to 6, wherein the external face of  
10 the light-transmitting member is capable of immobilizing a trapping component for trapping the detection-objective substance.

8. The optical analysis device according to claim 7, wherein the trapping component traps the  
15 detection-objective substance by an antigen-antibody reaction.

9. The optical analysis device according to claim 7, wherein the trapping component traps the detection-objective substance by hybridization  
20 reaction of DNA.